

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Schwartz, *et al.*
Serial No. 09/630,627
Filed: August 1, 2000
For: TRIPHOSPHATE OLIGONUCLEOTIDE
MODIFICATION REAGENTS AND
USES THEREOF
Art Unit: 1645
Examiner: Unassigned

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INFORMATION DISCLOSURE STATEMENT IN ACCORDANCE
WITH 37 C.F.R. §§ 1.97-1.98

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Since this Information Disclosure Statement is filed before the receipt of a first Office Action on the merits for the above-captioned application, no filing fee is due. If it is determined that a fee is due, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-1213.

In accordance with the duty of disclosure imposed by 37 C.F.R. §1.56 to inform the Patent Office of all references known by Applicant or Applicant's representative that may be material to the examination of the subject application, Applicant's representative hereby provides this Information Disclosure Statement that is prepared in accordance with 37 C.F.R. §§1.97-1.98. The Forms PTO-1449 (8 pages) and cited references are provided herewith.

The documents listed on the Forms PTO-1449 and supplied herewith are in the English language. Hence, in accordance with the requirements of 37 C.F.R. §1.98, as amended effective March 16, 1992, no further explanation of the listed items is necessary.

Applicant also makes known to the Examiner the following related, co-pending U.S. applications and their status:

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Serial No. 09/630,627
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USES THEREOF
Art Unit: 1645
Examiner: Unassigned

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**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT IN
ACCORDANCE WITH 37 C.F.R. §§ 1.97-1.98**

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

Since this Information Disclosure Statement is filed before the receipt of a first Office Action on the merits for the above-captioned application, no filing fee is due. If it is determined that a fee is due, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-1213.

In accordance with the duty of disclosure imposed by 37 C.F.R. §1.56 to inform the Patent Office of all references known by Applicant or Applicant's representative that may be material to the examination of the subject application, Applicant's representative hereby provides this Information Disclosure Statement that is prepared in accordance with 37 C.F.R. §§1.97-1.98. The Forms PTO-1449 (5 pages) and cited references are provided herewith.

The documents listed on the Forms PTO-1449 and supplied herewith are in the English language, with the exception of item BH. Item BH (International PCT Publication WO 00/40590) is in the French language but includes an English Abstract describing the subject matter. Hence, in accordance with the requirements of 37 C.F.R. §1.98, as amended effective March 16, 1992, no further explanation of the listed items is necessary.

U.S.S.N. 09/630,027
Schwartz *et al.*
IDS

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Applicant also makes known to the Examiner the following related, co-pending U.S. and International applications and their status:

<u>U.S.S.N.</u>	<u>Filing Date</u>	<u>Docket No.</u>
09/630,060	08/01/00	0751
09/815,978	03/22/01	0753
60/262,094	01/16/01	P755

<u>International App. No.</u>	<u>Filing Date</u>	<u>Docket No.</u>
	03/22/01	0753PC

Although these documents are made known to the Patent and Trademark Office in compliance with Applicant's duty of disclosure, such disclosure is not to be construed as an admission by Applicant or Applicant's representative that any of the references, singly or in any combination thereof, is effective as prior art against the subject application. In accordance with 37 C.F.R. § 1.97(h), the filing of this Supplemental Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 C.F.R. § 1.56(b) exists.

Applicant respectfully requests that the Examiner review the foregoing references and make them of record in the file history of the above-captioned application.

Respectfully submitted,
HELLER EHRMAN WHITE & McAULIFFE LLP

By:


Stephanie L. Seidman
Registration No. 33,779

Dated: May 9, 2001
Attorney Docket No. 37154-0752
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U.S.S.N. 09/630,027
Schwartz *et al.*
IDS

U.S.S.N.
09/630,060

Filing Date
08/01/00

Docket No.
0751

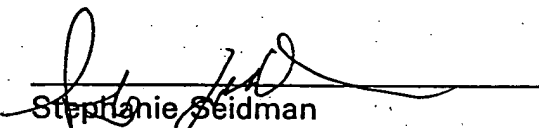
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Although these documents are made known to the Patent and Trademark Office in compliance with Applicant's duty of disclosure, such disclosure is not to be construed as an admission by Applicant or Applicant's representative that any of the references, singly or in any combination thereof, is effective as prior art against the subject application. In accordance with 37 C.F.R. §1.97(h), the filing of this Supplemental Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 C.F.R. §1.56(b) exists.

Applicant respectfully requests that the Examiner review the foregoing references and make them of record in the file history of the above-captioned application.

Respectfully submitted,
HELLER EHRMAN WHITE & McAULIFFE LLP

By:


Stephanie Seidman
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Dated: November 28, 2000
Attorney Docket No. 37154-0752
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FORM PTO-1449 (Modified)	ATTY. DOCKET NO. 37154-752	SERIAL NO. 09/630,627
	APPLICANT Schwartz <i>et al.</i>	
	FILING DATE August 1, 2000	GROUP 1645

LIST OF PATENTS AND PUBLICATIONS FOR
APPLICANT'S SUPPLEMENTAL INFORMATION
DISCLOSURE STATEMENT

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER							DATE	NAME	CLASS	SUB CLASS	FILING DATE
	AA	4	8	3	3	2	5	1	05/23/89	Musso et al	548	303	11/16/87
	AB	4	8	7	4	8	1	3	10/17/89	O'Shannessy	525	54.1	02/09/87
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	AJ	5	4	7	4	8	9	5	12/12/95	Ishii et al.	435	6	11/14/91
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	AL	5	5	2	1	2	9	0	05/28/96	Sivam et al.	530	391.5	11/21/94
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	AT	5	8	5	4	4	1	0	12/29/98	Arnold, Jr. et al.	536	23.1	03/31/94
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	AV	5	8	7	4	5	5	2	02/23/99	Jones et al.	536	22.1	05/08/95
	AW	5	8	7	7	2	2	0	03/02/99	Schwartz et al.	514	626	03/06/97
	AX	5	8	8	0	2	7	0	03/09/99	Berninger et al.	530	391.1	12/23/97

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U.S. PATENT DOCUMENTS

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	AY	5	9	5	5	5	9	7	09/21/99	Arnold, Jr. et al.	536	24.3	06/30/97
	AZ	5	9	5	8	9	0	1	09/28/99	Dwyet et al.	514	75	06/05/96
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	BD	6	0	3	4	1	3	5	03/07/00	Schwartz et al.	514	616	03/06/97
	BE	6	2	1	7	8	4	5	04/17/01	Schwartz et al.	424	1.69	11/06/97

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER							DATE	COUNTRY	CLASS	SUB CLASS	Translation Yes No	
	BF	9	8	3	5	9	7	8	08/20/98	PCT				
	BG	0	0	0	8	0	4	2	02/17/00	PCT (A1)				
	BH	0	0	4	0	5	9	0	07/13/00	PCT (A2, A3)				X
	BI	0	1	0	9	3	8	5	02/08/01	PCT (A2)				

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	BJ	Abrams et al., Technetium-99m-Human Polyclonal IgG Radiolabeled via the Hydrazino Nicotinamide Derivative for Imaging Focal Sites of Infection in Rats, <i>The Journal of Nuclear Medicine</i> 31(12): 2022-8 (1990).
	BK	Agrawal, S. (Ed.), Protocolss for Oligonucleotides and Análogs," Methods in Molecular Biology 20 (Humana Press)
	BL	Bischoff et al., Introduction of 5'-Terminal Functional Groups into Synthetic Oligonucleotides for Selective Immobilization, <i>Anal. Biochem.</i> 164: 336-44 (1987).

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OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

BM	Browne, D.W. and G.M. Dyson, 47. The Inhibitory Effect of Substituents in Chemical Reactions. Part III. The Reactivity of the isoThiocyano-group in Substituted Arylthiocarbimides, <i>J. Chem. Soc.</i> pgs. 178-9 (1924)
BN	Chang et al., Early Results in the International Design of New Bifunctional Chelators, <i>6th Conference on Radioimmunoassay and Radioimmunotherapy of Cancer -Supplement to Cancer</i> 80: 2347-53 (1997).
BO	Frutos et al., Reversible Protection and Reactive Patterning of Amine- and Hydroxyl-Terminated Self-Assembled Monolayers on Gold Surfaces for the Fabrication of Biopolymer Arrays, <i>Langmuir</i> 16: 2192-7 (2000).
BP	Ghosh et al., Covalent attachment of oligonucleotides to solid supports, <i>Nucl. Acids. Res.</i> 15(3):5353-72 (1987).
BQ	Ghosh et al., Synthesis of 5'-Oligonucleotide Hydrazide Derivatives and Their Use in Preparation of Enzyme-Nucleic Acid Hybridization Probes, <i>Anal. Biochem.</i> 178: 43-51 (1989).
BR	Hakala et al., Detection of Oligonucleotide Hybridization on a Single Microparticle by Time-Resolved Fluorometry: Hybridization Assays on Polymer Particles obtained by Direct Solid Phase Assembly of the Oligonucleotide Probes, <i>Bioconjugate Chem.</i> 8: 378-84 (1997).
BS	Hakala et al., Detection of Oligonucleotide Hybridization on a Single Microparticle by Time-Resolved Fluorometry: Quantitation and Optimization of a Sandwich Type Assay, <i>Bioconjugate Chem.</i> 9: 316-21 (1998).
BT	Hogrefe, R.I., An Antisense Oligonucleotide Primer, <i>Antisense & Nucleic Acid Drug Development</i> 9: 351-7 (1999).
BU	Hogrefe et al., An Improved Method for the Synthesis and Deprotection of Methylphosphonate Oligonucleotides, <i>Chapter 7 in Methods in Molecular Biology</i> Vol. 20: <i>Protocols for Oligonucleotides and Analogs</i> Agrawal, S. (Ed.) Humana Press Inc., Totowa, NJ. pgs. 143-164 (1993).
BV	Hnatowich et al., Comparative Properties of a Technetium-99m-Labeled Single Stranded Natural DNA and a Phosphorothioate Derivative <i>in Vitro</i> and in Mice, <i>The Journal of Pharmacology and Experimental Therapeutics</i> 276: 326-34 (1996).
BW	Hnatowich, D.J., Pharmacokinetics of 99m Tc-labeled oligonucleotides, <i>Q J Nucl. Med.</i> 40: 202-8 (1996).
BX	Hnatowich et al., Technetium-99m Labeling of DNA Oligonucleotides, <i>The Journal of Nuclear Medicine</i> 36(12): 2306-14 (1995).

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OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

BY	Kaneko et al., New Hydraone Derivatives of Adriamycin and Their Immunoconjugates--a Correlation between Acid Stability and Cytotoxicity, <i>Bioconjugate Chem.</i> <u>2(3)</u> : 133-41 (1991).
BZ	Kremsky et al., Immobilization of DNA via oligonucleotides containing an aldehyde or carboxylic acid group at the 5' terminus, <i>Nucl. Acids. Res.</i> <u>15(7)</u> : 2891-909 (1987).
CA	Pidgeon et al., Solid Phase Membrane Mimetics: Immobilized Artificial Membranes, <i>Enzyme Microb. Technol.</i> <u>12</u> : 149-50 (1990).
CB	Reynolds et al., Antisense oligonucleotides containing an internal non-nucleotide-based linker promote site-specific cleavage of RNA, <i>Nucl. Acids. Res.</i> <u>24(4)</u> : 760-5 (1996).
CC	Reynolds et al., A Non-Nucleotide-Based Linking Method for the Preparation of Psoralen-Derivatized Methylphosphonate Oligonucleotides, <i>Bioconjugate Chem.</i> <u>3</u> : 366-74 (1992).
CD	Reynolds et al., Synthesis and thermodynamics of oligonucleotides containing chirally pure Rp methylphosphonate linkages, <i>Nucl. Acids. Res.</i> <u>24(22)</u> : 4584-91 (1996).
CE	Rogers et al., Immobilization of Oligonucleotides onto a Glass Support via Disulfide Bonds: A Method for Preparation of DNA Microarrays, <i>Anal. Biochem.</i> <u>266</u> : 23-30 (1999).
CF	Rusckowski et al., Effect of Endogenous Biotin on the Applications of Streptavidin and Biotin in Mice, <i>Nuclear Medicine & Biology</i> <u>24</u> :263-8 (1997).
CG	Rusckowski et al., Imaging Osteomyelitis with Streptavidin and Indium-111-Labeled Biotin, <i>J. Nuclear Medicine</i> <u>37</u> : 1655-62 (1996).
CH	Rusckowski et al., Pretargeting Using Peptide Nucleic Acid, <i>6th Conference on Radioimmunodetection and radioimmunotherapy of Cancer -Supplement to Cancer</i> <u>80</u> : 2699-705 (1997).
CI	Salo et al., Aminooxy Functionalized Oligonucleotides: Preparation, On-Support Derivatization, and Postsynthetic Attachment to Polymer Support, <i>Bioconjugate Chem.</i> <u>10</u> : 815-23 (1999).
CJ	Salo et al., Disulfide-Tethered Solid Supports for Synthesis of Photoluminescent Oligonucleotide Conjugates: Hydrolytic Stability and Labeling on the Support, <i>Bioconjugate Chem.</i> <u>9</u> : 365-71 (1998).
CK	Schwartz et al., Preparation of Hydrazino-Modified Proteins and Their Use for the Synthesis of 99m Tc-Protein Conjugates, <i>Bioconjugate Chem.</i> <u>2</u> :333-6 (1991).
CL	Timofeev et al., Regioselective immobilization of short oligonucleotides to acrylic copolymer gels, <i>Nucl. Acids. Res.</i> <u>24(16)</u> : 3142-8 (1996).

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FORM PTO-1449 (Modified) LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT	ATTY. DOCKET NO. 37154-752	SERIAL NO. 09/630,627
	APPLICANT Schwartz <i>et al.</i>	
	FILING DATE August 1, 2000	GROUP 1645

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

	CM	Trevisiol et al., The Oxyamino-Aldehyde Coupling Reaction: An Efficient Method for the Derivatization of Oligonucleotides, <i>Tetrahedron Letters</i> <u>38(50)</u> : 8687-90 (1997).
	CN	Trevisiol et al., Synthesis of Nucleoside Triphosphate that Contain an Aminooxy Function for "Post-Amplification Labeling", <i>Eur. J. Org. Chem.</i> January 2000(N1): 211-7.
	CO	Watkins, T.I., 585. Trypanocides of the Phenanthridine Series. Part I. The Effect of Changing the Quaternary Grouping in Dimidium Bromide, <i>J. Chem. Soc.</i> pgs. 3059-64 (1952).

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FORM PTO-1449 Modified)	ATTY. DOCKET NO. 37154-0752	SERIAL NO. 09/630,627
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LIST OF PATENTS AND PUBLICATIONS FOR
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U.S. PATENT DOCUMENTS

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	AA	3	9	3	9	1	2	3	02/17/76	Matthews <i>et al.</i>	260	77.5	06/18/74
	AB	4	0	0	6	1	1	7	02/01/77	Merrifield	260	45.9	06/06/75
	AC	4	1	6	2	3	5	5	06/24/79	Tsibris	526	293	06/30/76
	AD	4	1	7	1	4	1	2	10/16/79	Coupek <i>et al.</i>	525	329	04/17/75
	AE	4	1	7	5	1	8	3	11/20/79	Ayers	536	57	05/24/78
	AF	4	1	7	7	0	3	8	12/04/79	Biebricher <i>et al.</i>	8	192	05/17/77
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	AH	4	1	8	0	5	2	4	12/25/79	Reusser <i>et al.</i>	585	644	02/16/78
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	AJ	4	3	3	7	0	6	3	06/29/82	Mihara <i>et al.</i>	23	230	03/03/80
	AK	4	4	0	4	2	8	9	09/13/83	Masuda <i>et al.</i>	436	538	09/02/81
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	AW	5	3	2	8	6	0	3	07/12/94	Velander <i>et al.</i>	210	198.2	08/19/92
	AX	5	3	3	4	6	4	0	08/02/94	Desai <i>et al.</i>	524	56	04/08/92

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	AZ	5	4	0	3	7	5	0	04/01/95	Braatz <i>et al.</i>	436	531	04/08/91
	BA	5	4	2	0	2	8	5	05/30/95	Schwartz <i>et al.</i>	546	281	03/04/93
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	BH	5	5	6	9	7	6	6	10/29/96	Waggoner <i>et al.</i>	548	150	11/29/93
	BI	5	6	2	7	0	2	7	05/06/97	Waggoner	435	6	09/22/92
	BJ	5	7	4	1	4	6	2	04/21/98	Nova <i>et al.</i>	422	68.1	04/25/95
	BK	5	7	4	4	3	0	5	04/28/98	Fodor <i>et al.</i>	435	6	06/06/95
	BL	5	7	5	1	6	2	9	05/12/98	Nova <i>et al.</i>	365	151	06/07/95
	BM	5	7	5	3	5	2	0	05/19/98	Schwartz <i>et al.</i>	436	542	02/06/95
	BN	5	8	2	4	4	7	3	10/20/98	Meade <i>et al.</i>	435	6	06/07/95
	BO	5	8	7	4	2	1	4	02/23/99	Nova <i>et al.</i>	435	6	10/03/95
	BP	5	8	7	6	9	3	8	03/02/99	Stolowitz <i>et al.</i>	435	6	04/11/97
	BQ	5	9	2	5	5	6	2	07/20/99	Nova <i>et al.</i>	435	287.1	06/07/95
	BR	5	9	5	2	1	7	2	09/14/99	Meade <i>et al.</i>	435	6	06/12/97
	BS	5	9	6	1	9	2	3	10/05/99	Nova <i>et al.</i>	422	68.1	09/30/96
	BT	5	9	7	2	6	3	9	10/26/99	Parandoosh	435	29	07/24/97
	BU	6	0	1	7	4	9	6	01/25/00	Nova <i>et al.</i>	422	68.1	09/06/96
	BV	6	0	2	5	1	2	9	02/15/00	Nova <i>et al.</i>	435	6	12/05/95

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LIST OF PATENTS AND PUBLICATIONS FOR
APPLICANT'S INFORMATION DISCLOSURE
STATEMENT

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER							DATE	NAME	CLASS	SUB CLASS	FILING DATE
	BW	6	0	6	6	4	4	8	05/23/00	Wohlstacter <i>et al.</i>	435	6	03/06/96
	BX	6	0	7	1	6	9	9	06/06/00	Meade <i>et al.</i>	435	6	06/19/98
	BY	6	0	7	4	8	2	3	06/13/00	Koster	435	6	11/06/96
	BZ	6	0	8	7	1	8	6	07/11/00	Cargill <i>et al.</i>	436	518	02/02/95

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER							DATE	COUNTRY	CLASS	SUB CLASS	Translation	
	CA	0	0	0	4	3	8	9	01/27/00	PCT				
	CB	0	0	0	4	3	8	2	01/27/00	PCT				
	CC	0	0	0	4	3	9	0	01/27/00	PCT				
	CD	0	3	6	1	7	6	8	09/19/89	EP A2				
	CE	0	3	8	4	7	6	9	02/23/90	EP B1, A2				
	CF	0	7	7	2	1	3	5	06/26/96	EP A1				
	CG	9	8	1	5	8	2	5	04/16/98	PCT				
	CH	9	8	3	1	7	3	2	07/23/98	PCT				
	CI	9	9	6	5	9	9	3	12/23/99	PCT				

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CJ	"IUPAC-IUB Commission on Biochemical Nomenclature, Abbreviated Nomenclature of Synthetic Polypeptides (Polymerized Amino Acids), Revised Recommendations (1971)," <i>Biochem. 11(5): 942-4 (1972).</i>
CK	Adleman <i>et al.</i> "Molecular Computation of Solutions to Combinatorial Problems," <i>Science 266: 1021-4 (1994).</i>
CL	Agrawal, S. "Importance of nucleotide sequence and chemical modifications of antisense oligonucleotides," <i>Biochim. Biophys. Acta. 1489: 53-68 (1999).</i>

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CM	Berg <i>et al.</i> "Polystyrene-Grafted Polyethylene: Design of Film and felt Matrices for Solid-Phase Peptide Synthesis," <i>Innovation Perspect. Solid Phase Synth. Collect. Pap., Int. Symp., 1st</i> , Epton R. (Ed.) pp.453-9 (1989).
CN	Berg <i>et al.</i> "Long-Chain Polystyrene-Grafted Polyethylene Film Matrix: A New Support for Solid-Phase Peptide Synthesis," <i>J. Am. Chem. Soc.</i> <u>111</u> : 8024-6 (1989).
CO	Berg <i>et al.</i> "Peptide Synthesis on Polystyrene-Grafted Polyethylene Sheets," <i>Pept. Proc. Eur. Pept. Symp., 20th</i> , Jung, G. <i>et al.</i> (Eds.) pp. 196-8 (1989).
CP	Bielinska <i>et al.</i> "Application of membrane-based dendrimer/DNA complexes for solid phase transfection in vitro and in vivo," <i>J. Biomaterials</i> <u>21</u> : 877-887 (2000).
CQ	Blomqvist <i>et al.</i> "Rapid Detection of Human Rhinoviruses in Nasopharyngeal Aspirates by a Microwell Reserve Transcription-PCR-Hybridization Assay," <i>J. Clin. Microbiol.</i> <u>37</u> : 2813-6 (1999).
CR	Brown, M.P. and Royer, C. "Fluorescence spectroscopy as a tool to investigate protein," <i>Curr. Opin. Biotechnol.</i> <u>8</u> : 45-9 (1997).
CS	Carlsson, B. and Haggblad, J. "Quantitative Determination of DNA-Binding Parameters for the Human Estrogen Receptor in a Solid-Phase Nonseparation Assay," <i>Anal. Biochem.</i> <u>232</u> : 172-9 (1995).
CT	Chen <i>et al.</i> "Stable-Isotope-Assisted MALDI-TOF Mass Spectrometry for Accurate Determination of Nucleotide Compositions of PCR Products," <u>71</u> : 3118-25 (1999).
CU	Compagno <i>et al.</i> "Antisense Oligonucleotides Containing Modified Bases Inhibit <i>in Vitro</i> Translation of <i>Leishmania amazonensis</i> mRNAs by Invading the Mini-exon Hairpin," <i>J. Biol. Chem.</i> <u>274</u> : 8191-8 (1999).
CV	Cristiano, R. J. and Roth, J.A. "Epidermal growth factor mediated DNA delivery into lung cancer cells via the epidermal growth factor receptor," <i>Cancer Gene Therapy</i> <u>3</u> : 4-10 (1996).
CW	Crooke, S.T. "Molecular mechanisms of action of antisense drugs," <i>Biochim. Biophys. Acta.</i> <u>1489</u> : 31-44 (1999).
CX	De Benedetti <i>et al.</i> "DNA chips: the future of biomarkers," <i>Int. J. Biol. Markers</i> <u>15(1)</u> : 1-9 (2000).
CY	Earnshaw <i>et al.</i> "Investigation of the Proposed Interdomain Ribose Zipper in Hairpin Ribozyme Cleavage Using 2'-Modified Nucleosides," <i>Biochemistry</i> <u>39</u> : 6410-21 (2000).
CZ	Feinberg <i>et al.</i> "A Technique for Radiolabeling DNA Restriction Endonuclease Fragments to High Specific Activity," <i>Anal. Biochem.</i> <u>132</u> : 6-13 (1983).

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DA	Filippov <i>et al.</i> "Solid-Phase Ligation of Synthetic DNA Fragments," <i>Bioorg Khim.</i> <u>16</u> : 1045-51 (1990).
DB	Flanagan <i>et al.</i> "A cytosine analog that confers enhanced potency to antisense oligonucleotides," <i>Proc. Natl. Acad. Sci. USA</i> <u>96</u> : 3513-8 (1999).
DC	Frutos <i>et al.</i> "Demonstration of a word design strategy for DNA computing on surfaces," <i>Nucl. Acids Res.</i> <u>25</u> : 4748-57 (1997).
DD	Frutos <i>et al.</i> "Enzymatic Ligation Reactions of DNA 'Words' on Surfaces for DNA Computing," <i>J. Am. Chem. Soc.</i> <u>120</u> (40): 10277-82 (1998).
DE	Fujita, K. and Silver, J. "Surprising Lability of Biotin-Streptavidin Bond During Transcription of Biotinylated DNA Bound to Paramagnetic Streptavidin Beads," <i>Biotechniques</i> <u>14</u> (4): 608-17 (1993).
DF	Gottschalk <i>et al.</i> "Efficient gene delivery and expression in mammalian cells using DNA coupled with perfringolysin O," <i>Gene Therapy</i> <u>2</u> : 498-503 (1995).
DG	Greene, T.W. and Wuts, P.G.M. (Eds.) <i>Protective Groups in Organic Synthesis</i> 3rd ed. (J. Wiley & Sons, Inc.) (1999).
DH	Gryaznov, S.M. "Oligonucleotide N3' -> P5' phosphoramidates as potential therapeutic agents," <i>Biochim. Biophys. Acta</i> <u>1489</u> : 131-40 (1999).
DI	Hermanson <i>et al.</i> <i>Immobilized Affinity Ligand Techniques</i> (Academic Press, Inc., San Diego) 1992.
DJ	Hoganson <i>et al.</i> "Targeted Delivery of DNA Encoding Cytotoxic Proteins through High-Affinity Fibroblast Growth Factor Receptors," <i>Human Gene Therapy</i> <u>9</u> : 2565-75 (1998).
DK	Hostomsky <i>et al.</i> "Solid-phase assembly of DNA duplexes from synthetic oligonucleotides," <i>Nucl. Acid. Symp. Ser.</i> <u>18</u> : 241-244 (1987).
DL	Hultman <i>et al.</i> "Solid-phase cloning to create sublibraries suitable for DNA sequencing," <i>J. Biotechnol.</i> <u>35</u> : 229-38 (1994).
DM	Kari, L. "DNA Computing: Arrival of Biological Mathematics," <i>Mathematical Intelligencer</i> <u>19</u> : 9-22 (1997).
DN	Kent, S.B.H. and Merrifield, R.B. Preparation and Properties of <i>tert</i> -Butyloxycarbonylaminoacyl-4-(oxymethyl)phenylacetamidomethyl-(Kel F-g-styrene) Resin, an Insoluble, Noncrosslinked Support for Solid Phase Peptide Synthesis," <i>Isr. J. Chem.</i> <u>17</u> : 243-7 (1978).

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DO	Kozwicz <i>et al.</i> "Development of a Novel, Rapid, Integrated <i>Cryptosporidium parvum</i> Detection Assay," <i>Appl. Environ. Microbiol.</i> <u>66</u> (6): 2711-7 (2000)
DP	Kumar, Abhay <i>et al.</i> "Nonradioactive Labeling of Synthetic Oligonucleotide Probes with Terminal Deoxynucleotidyl Transferase," <i>Anal. Biochem.</i> <u>169</u> : 376-82 (1988).
DQ	Lannutti <i>et al.</i> "Probing the Protein - DNA Contacts of a Yeast RNA Polymerase III Transcription Complex in a Crude Extract: Solid Phase Synthesis of DNA Photoaffinity Probes Containing a Novel Photoreactive Deoxycytidine Analog," <i>Biochemistry</i> <u>35</u> : 9821-31 (1996).
DR	Lee <i>et al.</i> "Direct Measurement of the Forces Between Complementary Strands of DNA," <i>Science</i> <u>266</u> : 771-3 (1994).
DS	Lees <i>et al.</i> "Activation of soluble polysaccharides with 1-cyano-4-dimethylaminopyridinium tetrafluoroborate for use in protein-polysaccharide conjugate vaccines and immunological reagents," <i>Vaccine</i> <u>14</u> : 190-8 (1996).
DT	Liu <i>et al.</i> "DNA computing on surfaces," <i>Nature</i> <u>403</u> : 175-9 (2000).
DU	Liu <i>et al.</i> "Progress toward demonstration of a surface based DNA computation: a one word approach to solve a model satisfiability problem," <i>BioSystems</i> <u>52</u> : 25-33 (1999).
DV	Liu <i>et al.</i> "DNA Computing on Surfaces: Encoding Information at the Single Base Level," <i>J. Comp. Biol.</i> <u>5</u> : 269-278 (1998).
DW	Lu <i>et al.</i> "Antisense DNA Delivery In Vivo: Liver Targeting by Receptor-Mediated Uptake," <i>J. Nucl. Med.</i> <u>35</u> : 269-75 (1994).
DX	Maeji <i>et al.</i> "Grafted supports used with the multipin method of peptide synthesis," <i>Reactive Polymers</i> <u>22</u> : 203-12 (1994).
DY	Marble <i>et al.</i> "RNA Transcription from Immobilized DNA Templates," <i>Biotechnol. Prog.</i> <u>11</u> : 393-6 (1995).
DZ	Merrifield, R.B. "Solid-Phase Peptide Synthesis. III. An Improved Synthesis of Bradykinin," <i>Biochemistry</i> <u>3</u> : 1385-90 (1964).
EA	Mitchell <i>et al.</i> "Preparation of Aminomethyl-Polystyrene Resin by Direct Amidomethylation," <i>Tetrahedron Lett.</i> <u>42</u> : 3795-8 (1976).
EB	Mitchell, A.R., Kent S.B.H. <i>et al.</i> "A New Synthetic Route to <i>tert</i> -Butyloxycarbonylaminoacyl-4-(oxymethyl)phenylacetamidomethyl-resin, an Improved Support for Solid-Phase Synthesis," <i>J. Org. Chem.</i> <u>43</u> : 2845-52 (1978).

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EC	Morishita, R. "Oligonucleotide-based therapy as a potential new pharmacotherapy," <i>Folia Pharmacol. Jpn. (Nippon Yakurigaku Zasshi)</i> <u>115</u> : 123-30 (2000).
ED	Muddiman <i>et al.</i> "Length and Base Composition of PCR-Amplified Nucleic Acids Using Mass Measurements from Electrospray Ionization Mass Spectrometry," <i>Anal. Chem.</i> <u>69</u> (8): 1543-1549 (1997).
EE	Mustajoki <i>et al.</i> "Steady-State Transcript Levels of the Porphobilinogen Deaminase Gene in Patients with Acute Intermittent Porphyria," <i>Genome Res.</i> <u>7</u> : 1054-60 (1997).
EF	Niemeyer <i>et al.</i> "Oligonucleotide-directed self-assembly of proteins: semisynthetic DNA-streptavidin hybrid molecules as connectors for the generation of macroscopic arrays and the construction of supramolecular bioconjugates," <i>Nucl. Acids Res.</i> <u>22</u> (25): 5530-9 (1994).
EG	Perales <i>et al.</i> "An evaluation of receptor-mediated gene transfer using synthetic DNA-ligand complexes," <i>Eur. J. Biochem.</i> <u>226</u> : 255-66 (1994).
EH	Pinkel <i>et al.</i> "Cytogenetic analysis using quantitative, high-sensitivity, fluorescence hybridization," <i>Proc. Natl. Acad. Sci. USA</i> <u>83</u> : 2934-8 (1986).
EI	Powers <i>et al.</i> "Protein Purification by Affinity Binding to Unilamellar Vesicles," <i>Biotechnol. Bioorg.</i> <u>33</u> : 173-82 (1989).
EJ	Reed, M.A. and Tror, J.M. "Computing with Molecules," <i>Scientific American</i> (June 2000) pp. 86-93
EK	Rigby <i>et al.</i> "Labeling Deoxyribonucleic Acid to High Specific Activity <i>in Vitro</i> by Nick Translation with DNA Polymerase I," <i>J. Mol. Biol.</i> <u>113</u> : 237-51 (1977).
EL	Roth, A. and Messer, W. "The DNA binding domain of the initiator protein," <i>EMBO J.</i> <u>14</u> : 2106-11 (1995).
EM	Salles <i>et al.</i> "DNA damage excision repair in microplate wells with chemiluminescence detection: Development and perspectives," <i>Biochimie</i> <u>81</u> : 53-8 (1999).
EN	Shafer, D.E., Lees, A. <i>et al.</i> "Activation of soluble polysaccharides with 1-cyano-4-dimethylaminopyridinium tetrafluoroborate (CDAP) for use in protein-polysaccharide conjugates vaccines and immunological reagents. II. Selective crosslinking of proteins to CDAP-activated polysaccharides," <i>Vaccine</i> <u>18</u> : 1273-81 (2000).
EO	Shirota <i>et al.</i> "Regulation of Murine Airway Eosinophilia and Th2 Cells by Antigen-Conjugated CpG Oligodeoxynucleotides as a Novel Antigen-Specific Immunomodulator," <i>J. Immunol.</i> <u>164</u> : 5575-82 (2000).

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EP	Smith <i>et al.</i> "A Surface-Based Approach to DNA Computation," <i>J. Comp. Biol.</i> <u>5</u> (2): 255-67 (1998).
EQ	Verheijen <i>et al.</i> "Incorporation of a 4-Hydroxy-N-acetylprolinol Nucleotide Analogue Improves the 3'-Exonuclease Stability of 2'- 5'- Oligoadenylate-Antisense Conjugates," <i>Bioorg. Med. Chem. Lett.</i> <u>10</u> : 801-4 (2000).
ER	Wang <i>et al.</i> "Surface-based DNA computing operations: DESTROY and READOUT," <i>BioSystems</i> <u>52</u> : 189-91 (1999).

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